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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/835,049 | 04/13/2001 | Jerry B. Roberts | M0000-1002 | 5936 |
| 7590 | 10/31/2005 | | EXAMINER | |
| William D. Miller, Esq. 3M Office of Intellectual Property Counsel P.O. Box 33427 St. Paul, MN 55133-3427 | | | DANG, HUNG Q | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2635 | |

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/835,049 | ROBERTS, JERRY B. |
| | Examiner | Art Unit |
| | Hung Q. Dang | 2635 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 4/13/2001.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-56 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 47-56 is/are allowed.

6) Claim(s) 1-3, 26-29 and 35-39 is/are rejected.

7) Claim(s) 4-25, 30-34 and 40-46 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 13 April 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 recites the limitation "the lateral stiffening means" in claim 2. There is insufficient antecedent basis for this limitation in the claim.
3. Claim 27 recites the limitation "the elastic center" in claim 1. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 20 recites the limitation "the second path" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 27 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Leung U.S. Patent 6,388,655.

Regarding claims 1,27 and 28, Leung teaches a force sensing touch location device (paragraph bridging columns 2-3) for sensing a touch force applied to a touch

surface, the touch force including a perpendicular component (inherent, any touch force applied to a touch surface must have a perpendicular component and a tangential component) that is perpendicular to a surface of accuracy of the touch device and a tangential component (column 6, lines 40-52) that is tangential to said surface of accuracy, the force sensing touch location device comprising:

 a plurality of force sensors (column 9, lines 15) that develop signals in response to application of the touch force to the touch surface; and

 a first mechanical path to transmit the majority of the tangential component of the touch force (paragraph bridging columns 8-9, unit 60 is the first mechanical path), wherein the first path does not include the plurality of force sensors.

Regarding claim 2, the perpendicular force component of a touch is inherently there (See figure 3a, Fnromal).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung U.S. Patent 6,388,655 in view of Merz U.S. Patent 5,565,657.

Regarding claims 3 and 29, Leung teaches a force sensing touch location device as claimed in claim 1, except wherein the first mechanical path comprises a plurality of shunt connections coupled to the touch surface.

One skilled in the art would recognize that a shunt is a mechanical means and it is used for regulating the passing amount of current in a circuit, as evidenced by Merz. Merz, in the same field of endeavor, discloses a force sensing touch location device, which comprises a shunt connection coupled to the touch surface (paragraph bridging columns 3-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a shunt(s) connection(s) coupled to the touch surface of the device disclosed by Leung, as evidenced by Merz, for regulating the passing amount of current in said device.

9. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung U.S. Patent 6,388,655.

Claim 35 is rejected for the same reason as claim 1. Even though, Leung does not specifically mention the fraction of the perpendicular component that is transmitted through the first force path is greater than the fraction of the tangential force component that is transmitted through the first force path, however, one skilled in the art would understand that in a touch force device, obviously, the perpendicular component will be great than the tangential component since the touch is applied vertically to the touch surface.

Regarding claim 36, even though, Leung does not specifically teach the ratio of the fraction of the perpendicular component that is transmitted through the first force path to the fraction of the tangential component that is transmitted through the first force path is at least 3:2, however, one skilled in the art would recognize that such ratio can be easily derived by one skilled practitioner through routine experimentations. Therefore, it would have been obvious to one of ordinary skill in the art to provide such ratio of perpendicular/tangential force to the device disclosed by Leung, as explained above.

Claims 37 and 38 are rejected for the same reasons as claim 35.

Regarding claim 39, Leung also implies using displacement sensors (column 5, lines 53-65).

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung U.S. Patent 6,388,655 in view of Walsh et al. U.S. Patent 6,633,746.

Regarding claim 26, as mentioned above, Leung teaches the force sensing touch location device of claim 1, except wherein the force sensing touch location device is a handheld device.

Walsh et al. also teaches a force sensing touch location device, wherein said device is a handheld device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a force sensing touch location handheld device having the characteristics disclosed by Leung, as evidenced by Walsh et al.

Allowable Subject Matter

11. Claims 47-56 are allowed.

Regarding claim 47, the prior arts of record fail to teach or disclose a force sensing touch location device for sensing a touch force applied to a touch surface as claimed in claim 47, the force sensing touch location device further comprises a plurality of elastic means, coupled between the touch surface and least one connecting surface, the plurality elastic means including components that are oblique with respect to the surface of accuracy, whereby the elastic center of the at least one sensing connection is positioned substantially within the surface of accuracy.

12. Claims 4-25, 30-34 and 40-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6, the prior arts of record fail to teach or disclose a force sensing touch location device of claim 2, wherein the at least once force sensor includes a perpendicular force path that is substantially stiff and wherein the lateral stiffening means includes a perpendicular force path that is substantially soft.

Regarding claim 4 and 30, the prior arts of record fail to teach or disclose the force sensing touch location device of claim 3, wherein the plurality of shunt connections comprise lateral stiffening means for impeding lateral motion of the touch surface.

Regarding claims 19-20, the prior arts of record fail to teach or disclose a force sensing touch location device of claim 1, wherein the second path comprises lateral softening means for directing the majority of the tangential component of the touch force through the first path.

Regarding claim 40, the prior arts of record fail to teach or disclose the force sensing touch location device of claim 37, which further comprises a plurality of elastic means, coupled between the touch surface and at least one connecting surface, for positioning the elastic center of the at least one sensing connection substantially within the surface of accuracy.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571) 272-3069. The examiner can normally be reached on 9:30AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

+HD

MICHAEL HORABIK
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